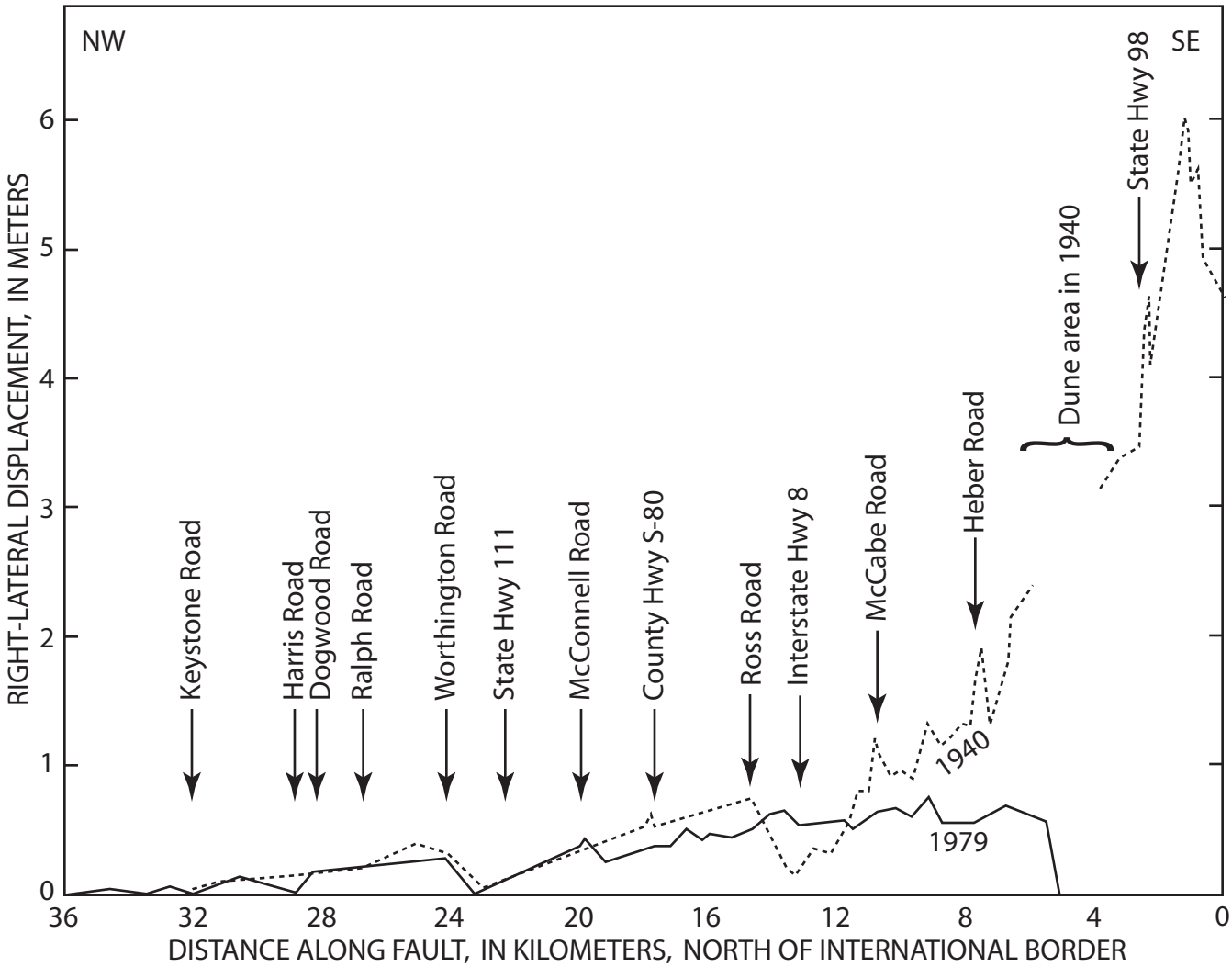

Figure 2. (a) Profiles of right-lateral component of displacement as a function of length along fault for the 1940 and 1979 ruptures. Comparison of slip in the two events shows important similarities and differences. Sieh (1996) argued that this example supports the concept of characteristic slip within individual patches of a fault, but not characteristic earthquakes. He argued that the sharp slip gradients in both 1940 and 1979 a few kilometers north of the international border suggest the presence of a fixed patch boundary. Redrafted from Sharp (1982b).

(b) Diagram illustrating the "slip-patch" model as proposed by Sieh (1996) for the Imperial fault: accumulated over scores of earthquake cycles, slip along the fault between stepovers is uniform, and in both stepover regions, slip tapers to zero. According to the model, each of the three patches along the fault has its own characteristic slip function, and narrow transition zones separate these regions of characteristic slip. From Sieh (1996).